

Point of Contact:
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CM1, Rm. 6 B 01

Access DB#

65355

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Travis McEnbush Examiner #: 79380 Date: 4/25/02
Art Unit: 1621 Phone Number 308-9479 Serial Number: 09/94/182
Mail Box and Bldg/Room Location: 8D03 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Process for selective oxidation of 1° Alcohols + Novel Carbohydrate aldehydes
Inventors (please provide full names): Jan Matthijs Jetten, Ronald Takao Marinus
Van Den Doel, Wim van Hartingsveldt, Mario Tarcisius Van Wanden
Earliest Priority Filing Date: 2/24/2000

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Claim 19: Process for oxidizing a primary alcohol using: nitroxyl cpd., oxidizing agent, enzyme, metal complex in medium of H₂O, alcohol, ether or organic solvent.

- Nitroxyl Cpd can be a di-tert-nitroxyl cpd. (TEMPO)
- Enzyme can be; oxidoreductase, peroxidase, polyphenol oxidase, laccase, or a hydrolase (eg: phytase or lipase)
- 1° alcohol is in a carbohydrate (α-glucan, fructan, glycoside, glyconic acid,
- 1° alcohol in a steroid or hydroxyalkylated carbo.,) textile fiber

Claim 31: A Carbohydrate w/ at least 1 cyclic monosaccharide chain which has, 1 carbonyl group / 25 monosaccharide units

where carbo. is a di-, oligo-, or polysaccharide of glucan, mannan, galactan, fructan, + chitin. glycoside

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Thanks:

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Searcher: Thom Larson Type of Search: NA Sequence (#) Vendors and cost where applicable: STN 4521
Searcher Phone #: 8-7309 AA Sequence (#) Dialog
Searcher Location: 6B01 Structure (#) Questel/Orbit
Date Searcher Picked Up: 5/1 Bibliographic X Dr. Link Lexis/Nexis
Date Completed: 5/7 Litigation Sequence Systems
Searcher Prep & Review Time: 60 Fulltext WWW/Internet
Clerical Prep Time: Patent Family
Online Time: 238 Other Other (specify)

=> file caplus

FILE 'CAPLUS' ENTERED AT 15:58:37 ON 07 MAY 2002

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FILE COVERS 1907 - 7 May 2002 VOL 136 ISS 19
FILE LAST UPDATED: 6 May 2002 (20020506/ED)

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=> D QUE L121

L112(4691)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	ALDEHYDES, PREPARATION/CT
L113(	804)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	"ALCOHOLS (L) PRIMARY"/CT
L114(	320)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L113 (L) (RCT/RL OR RACT/RL)
L115(	4403)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L112 (L) PREP/RL
L116(	42)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L114 AND L115
L117(	1)SEA	FILE=REGISTRY	ABB=ON	PLU=ON	TEMPO/CN
L118(	2148)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L117
L119(	2065)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	2564-83-2/RN
L120(	2148)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L118 OR L119
L121	7	SEA	FILE=CAPLUS	ABB=ON	PLU=ON L116 AND L120

Limit to
reactant or
reagent role
/ limit to
preparation of

=> D QUE L128

L122(	4691)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	ALDEHYDES, PREPARATION/CT
L123(	804)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	"ALCOHOLS (L) PRIMARY"/CT
L124(	320)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L123 (L) (RCT/RL OR RACT/RL)
L125(	4403)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L122 (L) PREP/RL
L126(	42)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L124 AND L125
L127(	2659)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	"OXIDATION (L) BIOL." + OLD/CT
L128	0	SEA	FILE=CAPLUS	ABB=ON	PLU=ON L126 AND L127

=> D QUE L133

L129(	4691)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	ALDEHYDES, PREPARATION/CT
L130(	804)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	"ALCOHOLS (L) PRIMARY"/CT
L131(	320)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L130 (L) (RCT/RL OR RACT/RL)
L132(	63)SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L129 (L) (BMF/RL OR BPN/RL)
L133	3	SEA	FILE=CAPLUS	ABB=ON	PLU=ON L132 AND L131

BMF =
Biological
manufacture
BPN =
Biological
preparation

=> D QUE L138

L134(4691)SEA FILE=CAPLUS ABB=ON PLU=ON ALDEHYDES, PREPARATION/CT
 L135(804)SEA FILE=CAPLUS ABB=ON PLU=ON "ALCOHOLS (L) PRIMARY"/CT
 L136(53)SEA FILE=CAPLUS ABB=ON PLU=ON L134 AND L135
 L137(1649)SEA FILE=CAPLUS ABB=ON PLU=ON NITROXYL/OBI
 L138 0 SEA FILE=CAPLUS ABB=ON PLU=ON L136 AND L137

=> D QUE L143

L139(4691)SEA FILE=CAPLUS ABB=ON PLU=ON ALDEHYDES, PREPARATION/CT
 L140(804)SEA FILE=CAPLUS ABB=ON PLU=ON "ALCOHOLS (L) PRIMARY"/CT
 L141(53)SEA FILE=CAPLUS ABB=ON PLU=ON L139 AND L140
 L142(438717)SEA FILE=CAPLUS ABB=ON PLU=ON ENZYM?/OBI
 L143 3 SEA FILE=CAPLUS ABB=ON PLU=ON L142 AND L141

=> D QUE L148

L144(4691)SEA FILE=CAPLUS ABB=ON PLU=ON ALDEHYDES, PREPARATION/CT
 L145(804)SEA FILE=CAPLUS ABB=ON PLU=ON "ALCOHOLS (L) PRIMARY"/CT
 L146(53)SEA FILE=CAPLUS ABB=ON PLU=ON L144 AND L145
 L147(108154)SEA FILE=CAPLUS ABB=ON PLU=ON CARBOHYDRATE/OBI
 L148 1 SEA FILE=CAPLUS ABB=ON PLU=ON L146 AND L147

=> D QUE L153

L149(4691)SEA FILE=CAPLUS ABB=ON PLU=ON ALDEHYDES, PREPARATION/CT
 L150(804)SEA FILE=CAPLUS ABB=ON PLU=ON "ALCOHOLS (L) PRIMARY"/CT
 L151(53)SEA FILE=CAPLUS ABB=ON PLU=ON L149 AND L150
 L152(18209)SEA FILE=CAPLUS ABB=ON PLU=ON (GLUCAN OR MANNAN OR GALACTAN
 OR FRUCTAN OR CHITIN)/OBI
 L153 0 SEA FILE=CAPLUS ABB=ON PLU=ON L151 AND L152

=> D QUE L158

L154(4691)SEA FILE=CAPLUS ABB=ON PLU=ON ALDEHYDES, PREPARATION/CT
 L155(804)SEA FILE=CAPLUS ABB=ON PLU=ON "ALCOHOLS (L) PRIMARY"/CT
 L156(53)SEA FILE=CAPLUS ABB=ON PLU=ON L154 AND L155
 L157(81879)SEA FILE=CAPLUS ABB=ON PLU=ON (MONOSACCHARIDE OR DISACCHARIDE
 OR TRISACCHARIDE OR POLYSACCHARIDE OR OLIGOSACCHARIDE OR
 ((MONO OR DI OR TRI OR POLY OR OLIGO) (W) SACCHARIDE))/OBI
 L158 0 SEA FILE=CAPLUS ABB=ON PLU=ON L156 AND L157

=> D QUE L163

L159(4691)SEA FILE=CAPLUS ABB=ON PLU=ON ALDEHYDES, PREPARATION/CT
 L160(804)SEA FILE=CAPLUS ABB=ON PLU=ON "ALCOHOLS (L) PRIMARY"/CT
 L161(53)SEA FILE=CAPLUS ABB=ON PLU=ON L159 AND L160
 L162(86542)SEA FILE=CAPLUS ABB=ON PLU=ON (OXIDOREDUCTASE OR PEROXIDASE
 OR POLYPHENOL OXIDASE OR POLYPHENOLOXIDASE OR LACCASE OR
 HYDROLASE OR PHYTASE OR LIPASE)/OBI
 L163 1 SEA FILE=CAPLUS ABB=ON PLU=ON L161 AND L162

=> S L121 OR L133 OR L143 OR L148 OR L163

L164 11 L121 OR L133 OR L143 OR L148 OR L163

=> FILE HCAPLUS

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FILE COVERS 1907 - 7 May 2002 VOL 136 ISS 19
FILE LAST UPDATED: 6 May 2002 (20020506/ED)

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=> D QUE L46

L37	824	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	"ALCOHOLS (L) PRIMARY"/CT
L39	839503	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	OXIDOREDUCTASE+ALL,OLD/CT
L40	500512	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	HYDROLASE+NT,OLD/CT
L41	1241953	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L39 OR L40
L42	299446	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	ALDEHYDES+NT,OLD/CT
L43	335	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L37 (L) (RCT OR RACT)/RL
L44	35601	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L42 (L) PREP/RL
L45	68	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L43 AND L44
L46	4	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L45 AND L41

=> D QUE L72

L37	824	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	"ALCOHOLS (L) PRIMARY"/CT
L39	839503	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	OXIDOREDUCTASE+ALL,OLD/CT
L40	500512	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	HYDROLASE+NT,OLD/CT
L41	1241953	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L39 OR L40
L42	299446	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	ALDEHYDES+NT,OLD/CT
L43	335	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L37 (L) (RCT OR RACT)/RL
L44	35601	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L42 (L) PREP/RL
L45	68	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L43 AND L44
L69	3530	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	TEMPO/CT OR TEMPOL/CT
L70	8	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L45 AND L69
L72	1	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L41 AND L70

=> D QUE L79

L37	824	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	"ALCOHOLS (L) PRIMARY"/CT
L39	839503	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	OXIDOREDUCTASE+ALL,OLD/CT
L40	500512	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	HYDROLASE+NT,OLD/CT
L41	1241953	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L39 OR L40
L42	299446	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	ALDEHYDES+NT,OLD/CT
L44	35601	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L42 (L) PREP/RL
L73	237976	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	MONOSACCHARIDES+NT/CT
L74	128521	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	OLIGOSACCHARIDES+NT/CT
L75	345796	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	POLYSACCHARIDES+NT/CT
L76	633751	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	(L73 OR L74 OR L75)

L77 1499 SEA FILE=HCAPLUS ABB=ON PLU=ON L76 AND L44
 L78 108 SEA FILE=HCAPLUS ABB=ON PLU=ON L77 AND L41
 L79 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L78 AND L37

=> D QUE L80

L42 299446 SEA FILE=HCAPLUS ABB=ON PLU=ON ALDEHYDES+NT, OLD/CT
 L44 35601 SEA FILE=HCAPLUS ABB=ON PLU=ON L42 (L) PREP/RL
 L69 3530 SEA FILE=HCAPLUS ABB=ON PLU=ON TEMPO/CT OR TEMPOL/CT
 L73 237976 SEA FILE=HCAPLUS ABB=ON PLU=ON MONOSACCHARIDES+NT/CT
 L74 128521 SEA FILE=HCAPLUS ABB=ON PLU=ON OLIGOSACCHARIDES+NT/CT
 L75 345796 SEA FILE=HCAPLUS ABB=ON PLU=ON POLYSACCHARIDES+NT/CT
 L76 633751 SEA FILE=HCAPLUS ABB=ON PLU=ON (L73 OR L74 OR L75)
 L77 1499 SEA FILE=HCAPLUS ABB=ON PLU=ON L76 AND L44
 L80 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L77 AND L69

=> S L46 OR L72 OR L79 OR L80
 L165 8 L46 OR L72 OR L79 OR L80

=> FILE MEDLINE

FILE 'MEDLINE' ENTERED AT 16:02:40 ON 07 MAY 2002

FILE LAST UPDATED: 5 MAY 2002 (20020505/UP). FILE COVERS 1958 TO DATE.

On April 22, 2001, MEDLINE was reloaded. See HELP RLOAD for details.

MEDLINE now contains IN-PROCESS records. See HELP CONTENT for details.

MEDLINE is now updated 4 times per week. A new current-awareness alert frequency (EVERYUPDATE) is available. See HELP UPDATE for more information.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2001 vocabulary. Enter HELP THESAURUS for details.

The OLDMEDLINE file segment now contains data from 1958 through 1965. Enter HELP CONTENT for details.

Left, right, and simultaneous left and right truncation are available in the Basic Index. See HELP SFIELDS for details.

THIS FILE CONTAINS CAS REGISTRY NUMBERS FOR EASY AND ACCURATE SUBSTANCE IDENTIFICATION.

=> D QUE L16

L1 385744 SEA FILE=MEDLINE ABB=ON PLU=ON ALCOHOLS+NT/CT
 L2 39134 SEA FILE=MEDLINE ABB=ON PLU=ON ALDEHYDES+NT/CT
 L3 620902 SEA FILE=MEDLINE ABB=ON PLU=ON HYDROLASES+NT/CT
 L4 303306 SEA FILE=MEDLINE ABB=ON PLU=ON OXIDOREDUCTASES+NT/CT
 L5 887716 SEA FILE=MEDLINE ABB=ON PLU=ON L3 OR L4
 L6 448 SEA FILE=MEDLINE ABB=ON PLU=ON L2 (L) CS/CT *CS = chemical synthesis*
 L7 55 SEA FILE=MEDLINE ABB=ON PLU=ON L1 AND L6
 L8 11 SEA FILE=MEDLINE ABB=ON PLU=ON L7 AND L5
 L9 72868 SEA FILE=MEDLINE ABB=ON PLU=ON OXIDATION-REDUCTION/CT
 L10 5 SEA FILE=MEDLINE ABB=ON PLU=ON L8 AND L9
 L16 3 SEA FILE=MEDLINE ABB=ON PLU=ON L10 NOT (ANIMAL/CT OR ESCHERICHIA COLI/CT)

=> D QUE L17

L1	385744	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	ALCOHOLS+NT/CT
L2	39134	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	ALDEHYDES+NT/CT
L3	620902	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	HYDROLASES+NT/CT
L4	303306	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	OXIDOREDUCTASES+NT/CT
L5	887716	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L3 OR L4
L6	448	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L2 (L) CS/CT
L7	55	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L1 AND L6
L8	11	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L7 AND L5
L12	1877	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L1 (L) CS/CT
L13	6	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L8 NOT L12
L17	3	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L13 NOT (ANIMAL/CT OR ESCHERICHIA COLI/CT)

=> D QUE L25

L1	385744	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	ALCOHOLS+NT/CT
L2	39134	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	ALDEHYDES+NT/CT
L6	448	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L2 (L) CS/CT
L7	55	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L1 AND L6
L24	2265	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	TEMPO OR 2564-83-2
L25	0	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L7 AND L24

=> D QUE L26

L2	39134	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	ALDEHYDES+NT/CT
L6	448	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L2 (L) CS/CT
L24	2265	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	TEMPO OR 2564-83-2
L26	0	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L6 AND L24

=> D QUE L30

L1	385744	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	ALCOHOLS+NT/CT
L2	39134	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	ALDEHYDES+NT/CT
L3	620902	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	HYDROLASES+NT/CT
L4	303306	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	OXIDOREDUCTASES+NT/CT
L5	887716	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L3 OR L4
L19	40487	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	NITROGEN OXIDES+NT/CT
L27	468	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L2 (L) BI/CT
L28	115	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L1 AND L27
L29	42	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L28 AND L5
L30	0	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L29 AND L19

BI = Biosynthesis

=> D QUE L31

L1	385744	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	ALCOHOLS+NT/CT
L2	39134	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	ALDEHYDES+NT/CT
L3	620902	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	HYDROLASES+NT/CT
L4	303306	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	OXIDOREDUCTASES+NT/CT
L5	887716	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L3 OR L4
L24	2265	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	TEMPO OR 2564-83-2
L27	468	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L2 (L) BI/CT
L28	115	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L1 AND L27
L29	42	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L28 AND L5
L31	0	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L29 AND L24

=> S L16 OR L17

L166 4 L16 OR L17

=> FILE EMBASE

FILE 'EMBASE' ENTERED AT 16:03:44 ON 07 MAY 2002
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FILE COVERS 1974 TO 2 May 2002 (20020502/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

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=> D QUE L60

L50	115806	SEA	FILE=EMBASE	ABB=ON	PLU=ON	ALCOHOL DERIVATIVE+NT/CT
L51	25518	SEA	FILE=EMBASE	ABB=ON	PLU=ON	ALDEHYDE+NT/CT
L52	4483	SEA	FILE=EMBASE	ABB=ON	PLU=ON	L50 AND L51
L53	225921	SEA	FILE=EMBASE	ABB=ON	PLU=ON	OXIDOREDUCTASE+NT/CT
L54	429514	SEA	FILE=EMBASE	ABB=ON	PLU=ON	HYDROLASE+NT/CT
L55	632445	SEA	FILE=EMBASE	ABB=ON	PLU=ON	L53 OR L54
L56	930	SEA	FILE=EMBASE	ABB=ON	PLU=ON	L52 AND L55
L57	25738	SEA	FILE=EMBASE	ABB=ON	PLU=ON	OXIDATION/CT
L58	89	SEA	FILE=EMBASE	ABB=ON	PLU=ON	L56 AND L57
L59	1712	SEA	FILE=EMBASE	ABB=ON	PLU=ON	TEMPOL/CT OR TEMPO
L60	1	SEA	FILE=EMBASE	ABB=ON	PLU=ON	L58 AND L59

=> FILE JICST

FILE 'JICST-EPLUS' ENTERED AT 16:04:11 ON 07 MAY 2002
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FILE COVERS 1985 TO 7 MAY 2002 (20020507/ED)

THE JICST-EPLUS FILE HAS BEEN RELOADED TO REFLECT THE 1999 CONTROLLED
TERM (/CT) THESAURUS RELOAD.

=> D QUE L111

L97	16110	SEA	FILE=WPIDS	ABB=ON	PLU=ON	NITROXYL? OR NITROGEN (W) OXIDE OR ?TEMPO OR TEMPO OR TEMPOL
L104	202072	SEA	FILE=JICST-EPLUS	ABB=ON	PLU=ON	ALCOHOL
L106	10447	SEA	FILE=JICST-EPLUS	ABB=ON	PLU=ON	OXIDIZ?
L107	259	SEA	FILE=JICST-EPLUS	ABB=ON	PLU=ON	PRIMARY (2W) L104
L108	22	SEA	FILE=JICST-EPLUS	ABB=ON	PLU=ON	L107 (5A) L106
L111	1	SEA	FILE=JICST-EPLUS	ABB=ON	PLU=ON	L108 AND L97

=> FILE WPIDS

FILE 'WPIDS' ENTERED AT 16:04:26 ON 07 MAY 2002
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FILE LAST UPDATED: 02 MAY 2002 <20020502/UP>
MOST RECENT DERWENT UPDATE 200228 <200228/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> The BATCH option for structure searches has been
enabled in WPINDEX/WPIDS and WPIX >>>

>>> PATENT IMAGES AVAILABLE FOR PRINT AND DISPLAY >>>

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES,
SEE <http://www.derwent.com/dwpi/updates/dwpicov/index.html> <<<

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=> D QUE L90

L81	193632	SEA FILE=WPIDS	ABB=ON	PLU=ON	ALCOHOL
L82	99823	SEA FILE=WPIDS	ABB=ON	PLU=ON	OXIDIZ? OR OXIDIS?
L83	31531	SEA FILE=WPIDS	ABB=ON	PLU=ON	ALDEHYDE
L84	920	SEA FILE=WPIDS	ABB=ON	PLU=ON	L81 (5A) L82
L85	239	SEA FILE=WPIDS	ABB=ON	PLU=ON	L84 AND L83
L86	1161530	SEA FILE=WPIDS	ABB=ON	PLU=ON	ENZYM? OR METAL?
L87	101	SEA FILE=WPIDS	ABB=ON	PLU=ON	L85 AND L86
L88	15224	SEA FILE=WPIDS	ABB=ON	PLU=ON	NITROXYL? OR NITROGEN (W) OXIDE
L89	7	SEA FILE=WPIDS	ABB=ON	PLU=ON	L87 AND L88
L90	6	SEA FILE=WPIDS	ABB=ON	PLU=ON	L89 NOT (GAS PURIFICN.)/TI

=> D QUE L92

L81	193632	SEA FILE=WPIDS	ABB=ON	PLU=ON	ALCOHOL
L82	99823	SEA FILE=WPIDS	ABB=ON	PLU=ON	OXIDIZ? OR OXIDIS?
L83	31531	SEA FILE=WPIDS	ABB=ON	PLU=ON	ALDEHYDE
L84	920	SEA FILE=WPIDS	ABB=ON	PLU=ON	L81 (5A) L82
L85	239	SEA FILE=WPIDS	ABB=ON	PLU=ON	L84 AND L83
L86	1161530	SEA FILE=WPIDS	ABB=ON	PLU=ON	ENZYM? OR METAL?
L87	101	SEA FILE=WPIDS	ABB=ON	PLU=ON	L85 AND L86
L91	898	SEA FILE=WPIDS	ABB=ON	PLU=ON	TEMPO OR TEMPOL OR ?TEMPO
L92	5	SEA FILE=WPIDS	ABB=ON	PLU=ON	L87 AND L91

=> D QUE L98

L82	99823	SEA FILE=WPIDS	ABB=ON	PLU=ON	OXIDIZ? OR OXIDIS?
L83	31531	SEA FILE=WPIDS	ABB=ON	PLU=ON	ALDEHYDE
L86	1161530	SEA FILE=WPIDS	ABB=ON	PLU=ON	ENZYM? OR METAL?
L93	25612	SEA FILE=WPIDS	ABB=ON	PLU=ON	SACCHARIDE OR POLYSACCHARIDE OR POLY SACCHARIDE OR OLIGOSACCHARIDE OR OLIGO SACCHARIDE OR MONOSACCHARIDE OR MONO SACCHARIDE OR DISACCHARIDE OR DI SACCHARIDE
L94	267	SEA FILE=WPIDS	ABB=ON	PLU=ON	L93 (5A) L82
L95	38	SEA FILE=WPIDS	ABB=ON	PLU=ON	L94 AND L83
L96	11	SEA FILE=WPIDS	ABB=ON	PLU=ON	L95 AND L86
L98	0	SEA FILE=WPIDS	ABB=ON	PLU=ON	L96 AND 97

=> D QUE L103

L82	99823	SEA FILE=WPIDS	ABB=ON	PLU=ON	OXIDIZ? OR OXIDIS?
L83	31531	SEA FILE=WPIDS	ABB=ON	PLU=ON	ALDEHYDE
L86	1161530	SEA FILE=WPIDS	ABB=ON	PLU=ON	ENZYM? OR METAL?
L97	16110	SEA FILE=WPIDS	ABB=ON	PLU=ON	NITROXYL? OR NITROGEN (W) OXIDE OR ?TEMPO OR TEMPO OR TEMPOL
L99	189455	SEA FILE=WPIDS	ABB=ON	PLU=ON	CARBOHYDRATE OR STARCH OR CELLULOSE OR AMYLOSE OR AMYLOPECTIN OR AMYLO PECTIN OR STEROL OR STEROID OR FIBER
L100	1250	SEA FILE=WPIDS	ABB=ON	PLU=ON	L99 (5A) L82
L101	95	SEA FILE=WPIDS	ABB=ON	PLU=ON	L100 AND L83
L102	35	SEA FILE=WPIDS	ABB=ON	PLU=ON	L101 AND L86
L103	7	SEA FILE=WPIDS	ABB=ON	PLU=ON	L102 AND L97

=> S L90 OR L92 OR L103
L167 10 L90 OR L92 OR L103

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=> DUP REM L166 L111 L164 L60 L165 L167
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FILE 'WPIDS' ENTERED AT 16:11:55 ON 07 MAY 2002
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PROCESSING COMPLETED FOR L111
PROCESSING COMPLETED FOR L164
PROCESSING COMPLETED FOR L60
PROCESSING COMPLETED FOR L165
PROCESSING COMPLETED FOR L167
L168 28 DUP REM L166 L111 L164 L60 L165 L167 (7 DUPLICATES REMOVED)

=> D IBIB AB IT 1-28

L168 ANSWER 1 OF 28	MEDLINE	DUPLICATE 1
ACCESSION NUMBER:	2002052089	MEDLINE
DOCUMENT NUMBER:	21636616	PubMed ID: 11777481
TITLE:	Highly enantioselective oxidation of cis-cyclopropylmethanols to corresponding aldehydes catalyzed by chloroperoxidase.	
AUTHOR:	Hu Shanghui; Dordick Jonathan S	
CORPORATE SOURCE:	Department of Chemical Engineering, Rensselaer Polytechnic Institute, Troy, New York 12180, USA.	
SOURCE:	JOURNAL OF ORGANIC CHEMISTRY, (2002 Jan 11) 67 (1) 314-7. Journal code: 2985193R. ISSN: 0022-3263.	
PUB. COUNTRY:	United States	
LANGUAGE:	English	
FILE SEGMENT:	Priority Journals	

ENTRY MONTH: 200204
 ENTRY DATE: Entered STN: 20020125
 Last Updated on STN: 20020403
 Entered Medline: 20020401

AB Chloroperoxidase (CPO) catalyzes the enantioselective oxidation of cyclopropylmethanols, such as 2-methylcyclopropylmethanol, to cyclopropyl aldehydes using tert-butyl hydroperoxide as the terminal oxidant. In all cases, CPO oxidation of cis-cyclopropanes shows much higher enantioselectivity than with the trans isomers, although CPO gives similar catalytic activity on both isomers. This presents the first example for a heme enzyme that catalyzes the enantioselective oxidation of cyclopropylmethanols. This finding enables a novel route to the synthesis of optically active cyclopropane derivatives, which occur widely in natural products and compounds of pharmaceutical interest. In addition, chiral cyclopropane molecules may be useful model substrates to investigate reaction mechanisms of CPO and the related cytochromes P450.

L168 ANSWER 2 OF 28 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:133666 HCAPLUS

DOCUMENT NUMBER: 134:180174

TITLE: Polysaccharide aldehydes prepared by oxidation method and used as strength additives in papermaking

INVENTOR(S): Cimecioglu, Levent A.; Thomaidis, John S.

PATENT ASSIGNEE(S): National Starch and Chemical Investment Holding Corporation, USA

SOURCE: Eur. Pat. Appl., 15 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1077221	A1	20010221	EP 2000-117282	20000817
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
BR 2000003645	A	20010327	BR 2000-3645	20000817
PRIORITY APPLN. INFO.:		US 1999-375931 A 19990817		
OTHER SOURCE(S):		MARPAT 134:180174		

AB Polysaccharide aldehydes are prepd. using selective oxidn. involving the use of nitroxyl radical mediated aq. oxidn. with a limited amt. of oxidant and defined reaction conditions. These polysaccharide aldehyde derivs. having max. effective aldehyde and minimal carboxylic acid levels making them esp. useful as wet, temporary wet and dry strength additives for paper. Thus, a papermaking additive was prepd. by oxidizing a granular starch using a system contg. 2,2,6,6-tetramethylpiperidine-1-oxyl as nitroxyl radical, NaBr, and Na hypochlorite as oxidant.

IT **Aldehydes, preparation**

RL: IMF (Industrial manufacture); PREP (Preparation)
 (oxidized polysaccharides; polysaccharide aldehydes prepd. by oxidn. method and used as strength additives in papermaking)

IT **Polysaccharides, uses**

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (oxidized; polysaccharide aldehydes prepd. by oxidn. method and used as strength additives in papermaking)

IT **Oxidation**

Paper
 (polysaccharide aldehydes prepd. by oxidn. method and used as strength

additives in papermaking)
 IT 13824-96-9, Sodium hypobromite
 RL: MOA (Modifier or additive use); USES (Uses)
 (in-situ oxidant; polysaccharide aldehydes prepd. by oxidn. method and used as strength additives in papermaking)
 IT 2564-83-2, TEMPO 14691-89-5, 4-Acetamido-TEMPO
 RL: MOA (Modifier or additive use); USES (Uses)
 (mediator; polysaccharide aldehydes prepd. by oxidn. method and used as strength additives in papermaking)
 IT 7647-15-6, Sodium bromide, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (oxidant precursor; polysaccharide aldehydes prepd. by oxidn. method and used as strength additives in papermaking)
 IT 7681-52-9, Sodium hypochlorite
 RL: MOA (Modifier or additive use); USES (Uses)
 (oxidant; polysaccharide aldehydes prepd. by oxidn. method and used as strength additives in papermaking)
 IT 9000-30-0DP, Guar gum, oxidized 9004-34-6DP, Cellulose, oxidized, uses 9004-62-0DP, 2-Hydroxyethyl cellulose, oxidized 9005-25-8DP, Starch, oxidized, cationic derivs., uses 9057-02-7DP, Pullulan, oxidized
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polysaccharide aldehydes prepd. by oxidn. method and used as strength additives in papermaking)
 REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L168 ANSWER 3 OF 28 WPIDS (C) 2002 THOMSON DERWENT
 ACCESSION NUMBER: 2001-281214 [29] WPIDS
 DOC. NO. CPI: C2001-085419
 TITLE: Selective oxidation of primary alcohols e.g. derivatized starch or cellulose involves treatment with oxidic compound in the presence of a di-tertiary-alkyl nitroxyl.
 DERWENT CLASS: A11 E19
 INVENTOR(S): BESEMER, A C; JASCHINSKI, T
 PATENT ASSIGNEE(S): (SCAD) SCA HYGIENE PROD ZEIST BV
 COUNTRY COUNT: 94
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001000681	A1	20010104	(200129)*	EN	11
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
AU 2000057170	A	20010131	(200129)		
EP 1065218	A1	20010103	(200129)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001000681	A1	WO 2000-NL453	20000628

AU 2000057170 A
EP 1065218 A1

AU 2000-57170 20000628
EP 1999-202126 19990630

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000057170 A	Based on	WO 200100681

PRIORITY APPLN. INFO: EP 1999-202126 19990630

AB WO 200100681 A UPAB: 20010528

NOVELTY - A primary **alcohol** is **oxidized** in the presence of a catalytic amount of a di-tertiary-alkyl **nitroxyl**. The oxidizing agent is an oxidic compound of a period 4 or 5 **metal** having an oxidation state of at least +3.

USE - Selective oxidation of primary alcohol groups to **aldehydes** and/or carboxylic acids. The process is useful for oxidizing compounds containing both primary and secondary hydroxyl groups e.g. 1,6-octanediol, 1,9-octadecanediol, sugar alcohols, glycosides and (especially) carbohydrates such as glucans (starch, cellulose), furanofructans, galactans and (galacto-)mannans, particularly hydroxyethyl starch and hydroxyethyl inulin.

ADVANTAGE - The oxidation process is chlorine-free. Manganese dioxide is 60% cheaper than hypochlorite on a molar basis.
Dwg.0/0

L168 ANSWER 4 OF 28 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 2002-132194 [18] WPIDS

DOC. NO. CPI: C2002-040719

TITLE: Amide or imide co-catalysts are used for increasing the rate of nitroxide-mediated oxidation of alcohols in the production of paper using cellulose, pulp or fiber as feedstock.

DERWENT CLASS: A97 E13 E16 F09

INVENTOR(S): CIMECIOGLU, A L; HARKINS, D E; LUCZAK, K A; THOMAIDES, J S

PATENT ASSIGNEE(S): (NATT) NAT STARCH & CHEM INVESTMENT HOLDING COR

COUNTRY COUNT: 31

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 1156065	A1	20011121 (200218)*	EN	17	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
AU 2001016711	A	20011122 (200218)			
CA 2348110	A1	20011119 (200218)	EN		
JP 2001329001	A	20011127 (200218)		44	
ZA 2001000608	A	20020130 (200218)		31	
CN 1324784	A	20011205 (200223)			

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 1156065	A1	EP 2001-103583	20010221
AU 2001016711	A	AU 2001-16711	20010130
CA 2348110	A1	CA 2001-2348110	20010517
JP 2001329001	A	JP 2001-15862	20010124
ZA 2001000608	A	ZA 2001-608	20010122

CN 1324784 A

CN 2001-104647 20010216

PRIORITY APPLN. INFO: US 2000-575303 20000519

AB EP 1156065 A UPAB: 20020319

NOVELTY - Production of an **aldehyde**-modified pulp for production of tissue/towel and other paper products by selective oxidation of a cellulose feedstock using a limited amount of oxidant and **nitroxyl** radical mediator

DETAILED DESCRIPTION - Substrates containing **alcohol** groups are **oxidized**, by **oxidizing the alcohol** groups in a medium with an oxidant, in the presence of a **nitroxyl** radical mediator and 1 or more co-catalyst(s) having amide or imide functionality.

INDEPENDENT CLAIMS are also included for the following:

(1) making paper having wet strength, temporary wet strength and dry strength properties using the **aldehyde**-modified product as the pulp stock or component of this; and

(2) oxidation of cellulose, cellulose fiber or cellulose pulp containing alcohol groups.

USE - The process is useful in a traditional papermaking process, e.g. in the manufacture of sheet-like masses and molded products made from cellulose derived from natural or synthetic sources

ADVANTAGE - The inherent wet strength, temporary wet strength and dry strength of the paper product are increased
Dwg.0/0

L168 ANSWER 5 OF 28 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 2001-410108 [44] WPIDS

DOC. NO. CPI: C2001-124404

TITLE: Oxidized and crosslinked cellulosic fibres useful in manufacture of fluff tissue paper and nonwoven products, has improved wet strength.

DERWENT CLASS: D22 F04 F09

INVENTOR(S): JASCHINSKI, T

PATENT ASSIGNEE(S): (SCAD) SCA HYGIENE PROD GMBH

COUNTRY COUNT: 94

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
DE 19953591	A1	20010517	(200144)*		22
WO 2001034903	A1	20010517	(200144)	EN	
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ					
NL OA PT SD SE SL SZ TR TZ UG ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM					
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC					
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE					
SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
AU 2001010296	A	20010606	(200152)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 19953591	A1	DE 1999-19953591	19991108
WO 2001034903	A1	WO 2000-EP11047	20001108
AU 2001010296	A	AU 2001-10296	20001108

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2001010296	A Based on	WO 200134903

PRIORITY APPLN. INFO: DE 1999-19953591 19991108

AB DE 19953591 A UPAB: 20010809

NOVELTY - A crosslinked cellulose-containing fiber material has the C6 atom of the glucose units oxidized to **aldehyde** or carboxy groups and is crosslinked by an agent containing a Group IVa - VIIIA transition metal, Al or Zn.

USE - Paper and non-wovens (and their mono- and multi-layer products) containing the cellulose fibers are claimed. The specifically claimed products based on such tissue papers and nonwovens are (dish)cloths, sanitary products, paper handkerchiefs, paper towels, facecloths, serviettes, bed linen and garments.

ADVANTAGE - Products such as tissue papers or nonwovens have a relative wetness the quotient wet strength/dry strength of at least 5% and a wet state fiber breaking length of at least 400m (claimed). They show better dry and wet strengths than many prior-art products, the wet tensile strength being as high as 9-15N/15mm.

Dwg.0/0

L168 ANSWER 6 OF 28 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.

ACCESSION NUMBER: 2001357665 EMBASE

TITLE: An oxidation of alcohols by oxygen with the enzyme laccase and mediation by **TEMPO**.

AUTHOR: Fabbrini M.; Galli C.; Gentili P.; Macchitella D.

CORPORATE SOURCE: C. Galli, Dipartimento di Chimica, Centro CNR Meccanismi di Reazione, P.le A. Moro 5, I-00185 Rome, Italy.
carlo.galli@uniroma1.it

SOURCE: Tetrahedron Letters, (22 Oct 2001) 42/43 (7551-7553).
Refs: 11

ISSN: 0040-4039 CODEN: TELEAY

PUBLISHER IDENT.: S 0040-4039(01)01463-0

COUNTRY: United Kingdom

DOCUMENT TYPE: Journal; Article

FILE SEGMENT: 029 Clinical Biochemistry

LANGUAGE: English

SUMMARY LANGUAGE: English

AB A simple and efficient oxidation of alcohols to carbonyl compounds by oxygen at room temperature is described; it requires the laccase/**TEMPO** mediator system as the catalyst. A possible mechanistic explanation is provided. .COPYRG. 2001 Elsevier Science Ltd. All rights reserved.

L168 ANSWER 7 OF 28 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:47323 CAPLUS

DOCUMENT NUMBER: 134:237059

TITLE: An easy and efficient method for the production of carboxylic acids and aldehydes by microbial oxidation of primary alcohols

AUTHOR(S): Gandolfi, R.; Ferrara, N.; Molinari, F.

CORPORATE SOURCE: Dipartimento di Scienze e Tecnologie Alimentari e Microbiologiche, Sezione Microbiologia Industriale, Universita degli Studi di Milano, Milan, 20133, Italy

SOURCE: Tetrahedron Letters (2001), 42(3), 513-514

CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Oxidn. of primary alcs. with acetic acid bacteria yields aldehydes or carboxylic acids. When the biotransformation is performed in water, acids are obtained. Aldehydes can be accumulated by using a water/isooctane 2-phase system.

IT Oxidation
(biol.; prepn. of carboxylic acids and aldehydes by microbial oxidn. of primary alcs.)

IT Oxidation
(enzymic; prepn. of carboxylic acids and aldehydes by microbial oxidn. of primary alcs.)

IT **Aldehydes, preparation**
Carboxylic acids, preparation
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(prepn. of carboxylic acids and aldehydes by microbial oxidn. of primary alcs.)

IT **Alcohols, biological studies**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(primary; prepn. of carboxylic acids and aldehydes by microbial oxidn. of primary alcs.)

IT 65-85-0P, Benzoic acid, preparation 66-25-1P, Hexanal 93-53-8P, 2-Phenylpropanal 100-52-7P, Benzaldehyde, preparation 103-04-8P, (Phenylthio)acetic acid 103-82-2P, Phenylacetic acid, preparation 104-55-2P, Cinnamaldehyde 109-52-4P, Pentanoic acid, preparation 110-62-3P, Pentanal 122-78-1P, Phenylacetaldehyde 141-27-5P, Geranial 142-62-1P, Hexanoic acid, preparation 459-80-3P, Geranic acid 492-37-5P, 2-Phenylpropanoic acid 503-74-2P, 3-Methylbutanoic acid 590-86-3P, 3-Methylbutanal 621-82-9P, Cinnamic acid, preparation 66303-55-7P, Phenylthioacetaldehyde
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(prepn. of carboxylic acids and aldehydes by microbial oxidn. of primary alcs.)

IT 60-12-8, 2-Phenylethanol 71-41-0, 1-Pentanol, biological studies 100-51-6, Benzyl alcohol, biological studies 104-54-1, Cinnamyl alcohol 106-24-1, Geraniol 111-27-3, 1-Hexanol, biological studies 123-51-3, 3-Methyl-1-butanol 699-12-7, 2-(Phenylthio)ethanol 1123-85-9, 2-Phenyl-1-propanol
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(prepn. of carboxylic acids and aldehydes by microbial oxidn. of primary alcs.)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L168 ANSWER 8 OF 28 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:376697 CAPLUS

DOCUMENT NUMBER: 135:122032

TITLE: The ruthenium/TEMPO-catalyzed aerobic oxidation of alcohols

AUTHOR(S): Dijksman, Arne; Arends, Isabel W. C. E.; Sheldon, Roger A.

CORPORATE SOURCE: Laboratory for Organic Chemistry and Catalysis, Delft University of Technology, Delft, 2628 BL, Neth.

SOURCE: Platinum Metals Review (2001), 45(1), 15-19
CODEN: PTMRA3; ISSN: 0032-1400

PUBLISHER: Johnson Matthey Public Ltd. Co.

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with 28 refs. The combination of RuCl₂(PPh₃)₃ and 2,2',6,6'-tetramethylpiperidine N-oxyl (TEMPO) affords an efficient catalytic system for the aerobic oxidn. of a variety of primary and secondary alcs., giving the corresponding aldehydes and ketones, in >99% selectivity in all cases. This interesting catalytic system is probably based on a hydridometal mechanism, involving a 'RuH₂(PPh₃)₃'-species as the active catalyst. TEMPO acts as a hydrogen transfer mediator and is regenerated by oxygen.

IT Oxidation
Oxidation catalysts
(aerobic; the ruthenium/TEMPO-catalyzed aerobic oxidn. of alcs.)

IT **Alcohols, reactions**
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(primary; the ruthenium/TEMPO-catalyzed aerobic oxidn. of alcs.)

IT Alcohols, reactions
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(secondary; the ruthenium/TEMPO-catalyzed aerobic oxidn. of alcs.)

IT **Aldehydes, preparation**
Ketones, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(the ruthenium/TEMPO-catalyzed aerobic oxidn. of alcs.)

IT 2564-83-2, TEMPO 34076-51-2, Dichlorobis(triphenylphosphine)ruthenium
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(the ruthenium/TEMPO-catalyzed aerobic oxidn. of alcs.)

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L168 ANSWER 9 OF 28 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
ACCESSION NUMBER: 2000:608928 CAPLUS
DOCUMENT NUMBER: 133:192110
TITLE: Process for selective oxidation of primary alcohols and novel **carbohydrate** aldehydes
INVENTOR(S): Jetten, Jan Matthijs; Van Den Dool, Ronald Tako Marinus; Van Hartingsveldt, Wim; Van Wandelen, Mario Tarcisius Ragmandus
PATENT ASSIGNEE(S): Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek TNO, Neth.
SOURCE: PCT Int. Appl., 13 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000050621	A2	20000831	WO 2000-NL117	20000224
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,				

DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
WO 2000050388 A1 20000831 WO 2000-NL118 20000224
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU,
CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,
IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,
MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,
SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

BR 2000008474 A 20020122 BR 2000-8474 20000224

BR 2000008478 A 20020122 BR 2000-8478 20000224

EP 1173409 A1 20020123 EP 2000-906769 20000224

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO

EP 1177308 A2 20020206 EP 2000-906768 20000224

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO

PRIORITY APPLN. INFO.:

EP 1999-200536 A 19990224

WO 2000-NL117 W 20000224

WO/2000-NL118 W 20000224

AB A process for producing aldehydes, and/or carboxylic acids is described, in which a primary alc., esp. a carbohydrate, is oxidized using a catalytic amt. of a nitrosonium compd. obtained by oxidizing a nitroxyl compd. in the presence of an enzyme compd. capable of oxidn. Further described are oxidized carbohydrates contg. at least 1 cyclic monosaccharide chain group carrying a carbaldehyde group per 25 monosaccharide units and per mol.

IT Carbohydrates, preparation

RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)

(aldehyde; selective oxidn. of primary alcs. and novel carbohydrate aldehydes)

IT Aldehydes, preparation

RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(carbohydrate; selective oxidn. of primary alcs. and novel carbohydrate aldehydes)

IT Alcohols, biological studies

RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)

(primary; selective oxidn. of primary alcs. and novel carbohydrate aldehydes)

IT Emulsifying agents

Thickening agents

(selective oxidn. of primary alcs. and novel carbohydrate aldehydes)

IT Uronic acids

RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)

(selective oxidn. of primary alcs. and novel carbohydrate aldehydes)

IT 9005-25-8DP, Starch, 6-aldehyde, preparation 9057-02-7DP, Pullulan, uronic acid

RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)

(selective oxidn. of primary alcs. and novel carbohydrate

aldehydes)

IT 9004-34-6, Cellulose, biological studies 9005-25-8, Starch, biological studies 9057-02-7, Pullulan
 RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
 (selective oxidn. of primary alcs. and novel **carbohydrate** aldehydes)

IT 9003-99-0, E.C. 1.11.1.7 80498-15-3, Laccase
 RL: CAT (Catalyst use); USES (Uses)
 (selective oxidn. of primary alcs. and novel **carbohydrate** aldehydes)

IT 2226-96-2, 4-Hydroxy-TEMPO 2564-83-2, TEMPO 3229-53-6, Proxyl
 14691-89-5, 4-Acetamido-TEMPO 25554-61-4, Doxyl
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (selective oxidn. of primary alcs. and novel **carbohydrate** aldehydes)

L168 ANSWER 10 OF 28 CAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 2000:53545 CAPLUS
 DOCUMENT NUMBER: 132:78146
 TITLE: Method and free-radical catalysts for oxidizing alcohols into aldehydes or ketones
 INVENTOR(S): Dijksman, Arie; Arends, Isabella Wilhelmina Christina Everdina; Sheldon, Roger Arthur
 PATENT ASSIGNEE(S): Technische Universiteit Delft, Neth.
 SOURCE: PCT Int. Appl., 14 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000002837	A1	20000120	WO 1999-NL438	19990709
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
NL 1009606	C2	20000111	NL 1998-1009606	19980710
AU 9949357	A1	20000201	AU 1999-49357	19990709
PRIORITY APPLN. INFO.: NL 1998-1009606 A 19980710 WO 1999-NL438 W 19990709				
OTHER SOURCE(S): CASREACT 132:78146; MARPAT 132:78146				
AB Primary or secondary alcs. (e.g., 1-octanol) are oxidized into aldehydes (e.g., 1-octanal) or ketones, resp., without the formation of carboxylic acid byproducts, using a ruthenium ion (e.g., from RuCl ₃) and oxygen in the presence of a substantially stable nitroxide free radical compd. (e.g., TEMPO; i.e., 2,2,6,6-tetramethyl-1-piperidinyl oxide) in which the two atoms bound to the nitrogen atom are not themselves hydrogen carriers.				
IT Nitroxides RL: CAT (Catalyst use); USES (Uses) (free radicals; method and free-radical catalysts for oxidizing alcs. into aldehydes or ketones)				

- IT Oxidation
(liq.-phase; of alcs. into aldehydes or ketones)
- IT Oxidation catalysts
(liq.-phase; ruthenium compds. and nitroxide free radical compds. for the conversion of alcs. into aldehydes or ketones)
- IT Alcohols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(method and free-radical catalysts for oxidizing alcs. into aldehydes or ketones)
- IT Aldehydes, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(method and free-radical catalysts for oxidizing alcs. into aldehydes or ketones)
- IT Ketones, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(method and free-radical catalysts for oxidizing alcs. into aldehydes or ketones)
- IT Alcohols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(primary; method and free-radical catalysts for oxidizing alcs. into aldehydes or ketones)
- IT Alcohols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(secondary; method and free-radical catalysts for oxidizing alcs. into aldehydes or ketones)
- IT 2564-83-2, TEMPO 7440-18-8D, Ruthenium, ions, uses 10049-08-8, Ruthenium trichloride 14293-70-0, Fremy's salt 15529-49-4
RL: CAT (Catalyst use); USES (Uses)
(method and free-radical catalysts for oxidizing alcs. into aldehydes or ketones)
- IT 98-85-1, 1-Phenylethanol 100-51-6, Benzyl alcohol, reactions 105-13-5, 4-Methoxybenzyl alcohol 111-87-5, 1-Octanol, reactions 123-96-6, 2-Octanol 556-82-1, 3-Methyl-2-butenol 619-73-8, p-Nitrobenzyl alcohol 696-71-9, Cyclooctanol 700-57-2, 2-Adamantanol
RL: RCT (Reactant); RACT (Reactant or reagent)
(method and free-radical catalysts for oxidizing alcs. into aldehydes or ketones)
- IT 98-86-2P, Acetophenone, preparation 100-52-7P, Benzaldehyde, preparation 107-86-8P, 3-Methyl-2-butenal 111-13-7P, 2-Octanone 123-11-5P, 4-Methoxybenzaldehyde, preparation 124-13-0P, Octanal 502-49-8P, Cyclooctanone 555-16-8P, p-Nitrobenzaldehyde, preparation 700-58-3P, 2-Adamantone
RL: SPN (Synthetic preparation); PREP (Preparation)
(method and free-radical catalysts for oxidizing alcs. into aldehydes or ketones)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L168 ANSWER 11 OF 28 WPIDS (C) 2002 THOMSON DERWENT
 ACCESSION NUMBER: 2000-549400 [50] WPIDS
 CROSS REFERENCE: 2000-601806 [50]
 DOC. NO. CPI: C2000-164080
 TITLE: Novel process for oxidizing cellulose
 , for use as e.g. a wet strength additive, using
 nitrosonium ions obtained by oxidizing a nitroxyl
 compound with an oxidizing agent.
 DERWENT CLASS: A11 B05 D16 E13 E19 F06 F09
 INVENTOR(S): BESEMER, A C; JETTEN, J M; VAN DEN DOOL, R; VAN
 HARTINGSVELDT, W
 PATENT ASSIGNEE(S): (SCAD) SCA HYGIENE PROD ZEIST BV; (SCAD) SCA HYGIENE PROD

GMBH
COUNTRY COUNT: 91
PATENT INFORMATION:

PATENT NO KIND DATE WEEK LA PG

WO 2000050463 A1 20000831 (200050) * EN 14
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL
OA PT SD SE SL SZ TZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS
LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL
TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000028330 A 20000914 (200063)
AU 2000029145 A 20000914 (200063)
EP 1155039 A1 20011121 (200176) EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
BR 2000008475 A 20020205 (200213)
CZ 2001002873 A3 20020116 (200215)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2000050463	A1	WO 2000-NL119	20000224
AU 2000028330	A	AU 2000-28330	20000224
AU 2000029145	A	AU 2000-29145	20000224
EP 1155039	A1	EP 2000-906770	20000224
		WO 2000-NL119	20000224
BR 2000008475	A	BR 2000-8475	20000224
		WO 2000-NL119	20000224
CZ 2001002873	A3	WO 2000-NL119	20000224
		CZ 2001-2873	20000224

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000028330	A Based on	WO 200050463
AU 2000029145	A Based on	WO 200050462
EP 1155039	A1 Based on	WO 200050463
BR 2000008475	A Based on	WO 200050463
CZ 2001002873	A3 Based on	WO 200050463

PRIORITY APPLN. INFO: EP 1999-200537 19990224; DE 1999-19953590
19991108

AB WO 200050463 A UPAB: 20020306

NOVELTY - Oxidizing cellulose using nitrosonium ions obtained by oxidizing a nitroxyl compound with an oxidizing agent in the presence of an oxidative enzyme or a complex of a transition metal and a complexing agent, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an oxidized cellulose containing at least 1 cyclic monosaccharide chain group carrying a 6-carbaldehyde group and at least 1 cyclic monosaccharide chain group carrying a 6-carboxylic group per 100 monosaccharide units and per molecule, or a chemical derivative thereof; and

(2) a cellulose derivative in which at least part of the 6-carbaldehyde groups introduced by oxidation has been converted to a

group of formula of (I), (II), (III) or (IV).

-CH=N-R (I)

CH₂-NHR (II)

-CH(OR₃)-O-CH₂-COOR₂ (III)

-CH(O-CH₂-COOR₂)₂ (IV).

R = H, hydroxyl, amino, R₁, OR₁ or NHR₁;

R₁ = 1-20 C alkyl, 1-20 C acyl, a carbohydrate residue, or a group coupled with or capable of being coupled with a carbohydrate residue;

R₂ = H, a metal cation or an optionally substituted ammonium group; and

R₃ = H or a direct bond to the oxygen atom of a dehydrogenated hydroxyl group of the cellulose.

USE - The **oxidized cellulose fibers** are used for paper and tissue applications. The derivatives are used as wet strength additives, water-absorbing polymers etc. and as starting materials for further functionalization, especially with alcohols, amines and other agents such as crosslinking agents (diamines, diols, etc.) which can be used to crosslink the cellulose derivatives or to couple them to amino acids, proteins, active groups etc.

ADVANTAGE - The oxidation results in the presence of both aldehyde groups and carboxyl groups in the product. The **oxidized cellulose fibers** have improved wet strength properties.

Dwg.0/0

L168 ANSWER 12 OF 28 WPIDS (C) 2002 THOMSON DERWENT
 ACCESSION NUMBER: 2000-601806 [57] WPIDS
 CROSS REFERENCE: 2000-549400 [48]
 DOC. NO. CPI: C2000-179999
 TITLE: Cellulose-containing fibrous material, for tissue papers and tissue products used in personal grooming and hygiene, includes hydroxy groups oxidized at the glucose units to **aldehyde** and/or carboxy groups.
 DERWENT CLASS: A11 A96 B05 D16 D22 E13 E19 F06 F07 F09
 INVENTOR(S): BESEMER, C A; BRAGD, P; GUNNARS, S; JASCHINSKI, T; JETTEN, M J; VAN DEN DOOL, R; VAN HARTINGSVELDT, W; BESEMER, A C; JETTEN, J M
 PATENT ASSIGNEE(S): (SCAD) SCA-HYGIENE PROD GMBH; (SCAD) SCA HYGIENE PROD ZEIST BV
 COUNTRY COUNT: 91
 PATENT INFORMATION:

bad data

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2000050462	A1	20000831	(200057)*	EN	75
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL					
OA PT SD SE SL SZ TZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES					
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS					
LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL					
TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
AU 2000029145	A	20000914	(200063)		
DE 19953590	A1	20010517	(200128)		
EP 1155040	A1	20011121	(200176)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT					
RO SE SI					
CZ 2001002901	A3	20020116	(200215)		
BR 2000008378	A	20020219	(200222)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2000050462	A1	WO 2000-EP1538	20000224
AU 2000029145	A	AU 2000-29145	20000224
DE 19953590	A1	DE 1999-19953590	19991108
EP 1155040	A1	EP 2000-907622	20000224
		WO 2000-EP1538	20000224
CZ 2001002901	A3	WO 2000-EP1538	20000224
		CZ 2001-2901	20000224
BR 2000008378	A	BR 2000-8378	20000224
		WO 2000-EP1538	20000224

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000029145	A	WO 200050462
EP 1155040	A1	WO 200050462
CZ 2001002901	A3	WO 200050462
BR 2000008378	A	WO 200050462

PRIORITY APPLN. INFO: DE 1999-19953590 19991108; EP 1999-200537
19990224

AB WO 200050462 A UPAB: 20020409

NOVELTY - A cellulose-containing fibrous material includes hydroxy groups, which were oxidized at the glucose units of the cellulose to **aldehyde** and/or carboxy groups.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(a) a paper or non-woven comprising the cellulose-containing fibrous material;

(b) a method of producing the cellulose-containing fibrous material comprising **oxidizing** the cellulose-containing fibrous material using a nitroxy compound optionally in combination with a primary oxidizing agent; and

(c) a method of producing a paper or nonwoven comprising wet laying the **oxidized cellulose**-containing fibrous material, pressing the wet-laid fibrous material, and drying the pressed fibrous material.

USE - The invention is used for tissue papers and tissue products used in personal grooming and hygiene, the household sector, industry, the institutional field in a wide variety of cleaning purposes. It includes fluff products in specialist circles, e.g. absorptive material for diapers/nappies, articles of feminine hygiene including sanitary napkins/towels, tampons, and slips or incontinence articles for adults.

ADVANTAGE - The invention results in paper/nonwoven products without the use of additives and exhibiting suitable strength parameters.
Dwg. 0/0

L168 ANSWER 13 OF 28 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 2000-565437 [52] WPIDS

CROSS REFERENCE: 2000-549415 [48]

DOC. NO. CPI: C2000-168474

TITLE: Preparation of nitrosonium ions useful as catalytic oxidizing agent for selective oxidation of primary alcohols to **aldehydes**.

DERWENT CLASS: A11 B05 D17 E13 E19 F06

INVENTOR(S): BESEMER, A C; JASCHINSKI, T; JETTEN, J M; VAN DEN DOOL, R
T M

PATENT ASSIGNEE(S): (SCAD) SCA HYGIENE PROD ZEIST BV

COUNTRY COUNT: 91
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2000050388	A1	20000831	(200052)	* EN	17
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
AU 2000028329	A	20000914	(200063)		
EP 1173409	A1	20020123	(200214)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
BR 2000008474	A	20020122	(200216)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2000050388	A1	WO 2000-NL118	20000224
AU 2000028329	A	AU 2000-28329	20000224
EP 1173409	A1	EP 2000-906769	20000224
		WO 2000-NL118	20000224
BR 2000008474	A	BR 2000-8474	20000224
		WO 2000-NL118	20000224

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000028329	A Based on	WO 200050388
EP 1173409	A1 Based on	WO 200050388
BR 2000008474	A Based on	WO 200050388

PRIORITY APPLN. INFO: EP 1999-200536 19990224

AB WO 200050388 A UPAB: 20020308

NOVELTY - A new production of nitrosonium ions comprises oxidizing a **nitroxyl** compound with an oxidizing agent in the presence of a transition **metal** and a complexing agent.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

- (1) a process for **oxidizing a carbohydrate** with an **oxidizing** agent in the presence of a nitrosonium ion as catalyst, the nitrosonium ions being produced by the above process;
- (2) an **oxidized carbohydrate**, the **carbohydrate** being selected from disaccharides, oligosaccharides and polysaccharides of the alpha -glucan, mannan, galactan, fructan, and chitin types and carbohydrate glycosides, containing at least one cyclic monosaccharide chain group carrying a carbaldehyde group per 25 monosaccharide units and per average molecule or its derivatives; and
- (3) a carbohydrate as above, further containing carboxyl and/or carboxymethyl groups.

USE - The nitrosonium ions are used as a catalytic oxidizing agent for the selective oxidation of primary alcohols to **aldehydes**. The process is particularly suitable for **oxidizing** secondary **alcohols**, especially **carbohydrates**, to keto derivatives. The novel carbohydrate products are useful as thickeners, viscosifiers, water-absorbing polymers and starting materials for further

functionalization. The process of the invention can be used to modify biopolymers (e.g. starch, non-wood cellulose to allow derivatization or to adapt viscosity and other properties such as strength and dyeability).

ADVANTAGE - The process avoids the need for chlorine-based oxidizing agents and H₂O₂ or O₂.

Dwg. 0/0

L168 ANSWER 14 OF 28 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 3
 ACCESSION NUMBER: 2000:786475 CAPLUS
 DOCUMENT NUMBER: 134:115518
 TITLE: A New Polymer-Attached Reagent for the Oxidation of
 Primary and Secondary Alcohols
 AUTHOR(S): Sourkouni-Argirusi, Georgia; Kirschning, Andreas
 CORPORATE SOURCE: Institut fuer Organische Chemie, Universitaet
 Hannover, Hannover, D-30167, Germany
 SOURCE: Organic Letters (2000), 2(24), 3781-3784
 CODEN: ORLEF7; ISSN: 1523-7060
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 134:115518

AB A new, polymer-bound reagent system for the efficient oxidn. of primary alcs. to aldehydes and secondary alcs. to ketones in the presence of a catalytic amt. of 2,2,6,6-tetramethyl-1-piperidinyloxy (TEMPO) is described. The reagent was prepd. by treating a com. available polymer-bound bromide (Fluka) with bis(acetato-.kappa.O)phenyliodine to give a polymer-bound trimethylammonium-bis(acetato-.kappa.O)bromate(1-) reagent. In most cases, workup of this heavy metal-free oxidn. is achieved by simple filtration followed by removal of the solvent. In selected examples this reagent was compared with the known polymer-bound permanganate and chromium(VI) reagents.

IT **Aldehydes, preparation**

RL: SPN (Synthetic preparation); **PREP (Preparation)**

(aliph.; prepn. of aldehydes or ketones by oxidn. of primary or secondary alcs. using polymer-bound bis(acetato-.kappa.O)bromate(1-) reagent and tetramethylpiperidinyloxy catalyst)

IT **Alcohols, reactions**

RL: **RCT (Reactant); RACT (Reactant or reagent)**

(aralkyl; prepn. of aldehydes or ketones by oxidn. of primary or secondary alcs. using polymer-bound bis(acetato-.kappa.O)bromate(1-) reagent and tetramethylpiperidinyloxy catalyst)

IT **Aldehydes, preparation**

Ketones, preparation

RL: SPN (Synthetic preparation); **PREP (Preparation)**

(arom.; prepn. of aldehydes or ketones by oxidn. of primary or secondary alcs. using polymer-bound bis(acetato-.kappa.O)bromate(1-) reagent and tetramethylpiperidinyloxy catalyst)

IT **Alcohols, reactions**

RL: **RCT (Reactant); RACT (Reactant or reagent)**

(benzyl; prepn. of aldehydes or ketones by oxidn. of primary or secondary alcs. using polymer-bound bis(acetato-.kappa.O)bromate(1-) reagent and tetramethylpiperidinyloxy catalyst)

IT **Ketones, preparation**

RL: SPN (Synthetic preparation); **PREP (Preparation)**

(cycloalkanones; prepn. of aldehydes or ketones by oxidn. of primary or secondary alcs. using polymer-bound bis(acetato-.kappa.O)bromate(1-) reagent and tetramethylpiperidinyloxy catalyst)

IT **Oxidation**

Oxidizing agents

Polymer-supported reagents

(prepn. of aldehydes or ketones by oxidn. of primary or secondary alcs. using polymer-bound bis(acetato-.kappa.O)bromate(1-) reagent and tetramethylpiperidinyloxy catalyst)

IT Cycloalkanols-

RL: RCT (Reactant); RACT (Reactant or reagent)

(prepn. of aldehydes or ketones by oxidn. of primary or secondary alcs. using polymer-bound bis(acetato-.kappa.O)bromate(1-) reagent and tetramethylpiperidinyloxy catalyst)

IT Ketones, preparation

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of aldehydes or ketones by oxidn. of primary or secondary alcs. using polymer-bound bis(acetato-.kappa.O)bromate(1-) reagent and tetramethylpiperidinyloxy catalyst)

IT Alcohols, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(primary; prepn. of aldehydes or ketones by oxidn. of primary or secondary alcs. using polymer-bound bis(acetato-.kappa.O)bromate(1-) reagent and tetramethylpiperidinyloxy catalyst)

IT Alcohols, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(secondary; prepn. of aldehydes or ketones by oxidn. of primary or secondary alcs. using polymer-bound bis(acetato-.kappa.O)bromate(1-) reagent and tetramethylpiperidinyloxy catalyst)

IT 2564-83-2, 2,2,6,6-Tetramethyl-1-piperidinyloxy

RL: CAT (Catalyst use); USES (Uses)

(prepn. of aldehydes or ketones by oxidn. of primary or secondary alcs. using polymer-bound bis(acetato-.kappa.O)bromate(1-) reagent and tetramethylpiperidinyloxy catalyst)

IT 75-84-3, 2,2-Dimethyl-1-propanol 93-56-1, 1-Phenyl-1,2-ethanediol
98-85-1, .alpha.-Methylbenzenemethanol 100-51-6, Benzenemethanol,
reactions 105-13-5, 4-Methoxybenzenemethanol 108-93-0, Cyclohexanol,
reactions 112-53-8, 1-Dodecanol 529-33-9, 1,2,3,4-Tetrahydro-1-
naphthalenol 696-71-9, Cyclooctanol 3240-34-4, Bis(acetato-
.kappa.O)phenyliodine 4064-06-6, 1,2:3,4-Di-O-isopropylidene-.alpha.-D-
galactopyranose 6351-10-6, 2,3-Dihydro-1H-inden-1-ol 13513-82-1
120346-83-0 320575-04-0 320575-06-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(prepn. of aldehydes or ketones by oxidn. of primary or secondary alcs. using polymer-bound bis(acetato-.kappa.O)bromate(1-) reagent and tetramethylpiperidinyloxy catalyst)

IT 74-89-5DP, Methanamine, quaternized, polymer-bound reaction products with
bis(acetato-.kappa.O)bromate(1-), preparation 98-86-2P, Acetophenone,
preparation 112897-04-8P 256385-96-3DP, compd. with polymer-bound
trimethylammonium cations

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. of aldehydes or ketones by oxidn. of primary or secondary alcs. using polymer-bound bis(acetato-.kappa.O)bromate(1-) reagent and tetramethylpiperidinyloxy catalyst)

IT 83-33-0P, 2,3-Dihydro-1H-inden-1-one 100-52-7P, Benzaldehyde,
preparation 108-94-1P, Cyclohexanone, preparation 112-54-9P, Dodecanal
123-11-5P, 4-Methoxybenzaldehyde, preparation 502-49-8P, Cyclooctanone
529-34-0P, 3,4-Dihydro-1(2H)-naphthalenone 579-74-8P,
1-(2-Methoxyphenyl)ethanone 582-24-1P, 2-Hydroxy-1-phenylethanone
630-19-3P, 2,2-Dimethylpropanal 4933-77-1P 53907-33-8P 320575-05-1P
320575-07-3P

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of aldehydes or ketones by oxidn. of primary or secondary alcs. using polymer-bound bis(acetato-.kappa.O)bromate(1-) reagent and

tetramethylpiperidinyloxy catalyst)

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L168 ANSWER 15 OF 28 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:167914 CAPLUS

DOCUMENT NUMBER: 132:307854

TITLE: Green, catalytic oxidation of alcohols in water

AUTHOR(S): ten Brink, Gerd-jan; Arends, Isabel W. C. E.; Sheldon,
Roger A.CORPORATE SOURCE: Laboratory for Organic Chemistry and Catalysis, Delft
University of Technology, Delft, 2628, Neth.SOURCE: Science (Washington, D. C.) (2000), 287(5458),
1636-1639

CODEN: SCIEAS; ISSN: 0036-8075

PUBLISHER: American Association for the Advancement of Science

DOCUMENT TYPE: Journal

LANGUAGE: English

- AB Alc. oxidns. are typically performed with stoichiometric reagents that generate heavy-metal waste and are usually run in chlorinated solvents. A water-sol. palladium(II) bathophenanthroline complex is a stable recyclable catalyst for the selective aerobic oxidn. of a wide range of alcs. to aldehydes, ketones, and carboxylic acids in a biphasic water-alc. system. Allylic and benzylic alcs. were oxidized to the corresponding aldehydes. Non-activated 1-hexanol was oxidized to hexanoic acid; adding TEMPO (2,2,6,6-tetramethyl-1-piperidinyloxy) stops the reaction at the aldehyde. The use of water as a solvent and air as the oxidant makes the reaction interesting from both an economic and environmental point of view.
- IT Alcohols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(allyl, secondary; prepn. of aldehydes or ketones by environmentally clean catalytic oxidn. of alcs. in water)
- IT Alcohols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(benzyl; prepn. of aldehydes or ketones by environmentally clean catalytic oxidn. of alcs. in water)
- IT Oxidation
Oxidation catalysts
(prepn. of aldehydes or ketones by environmentally clean catalytic oxidn. of alcs. in water)
- IT Aldehydes, preparation
Ketones, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of aldehydes or ketones by environmentally clean catalytic oxidn. of alcs. in water)
- IT Alcohols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(primary; prepn. of aldehydes or ketones by environmentally clean catalytic oxidn. of alcs. in water)
- IT Alcohols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(secondary; prepn. of aldehydes or ketones by environmentally clean catalytic oxidn. of alcs. in water)
- IT 3375-31-3, Palladium diacetate 98645-86-4
RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(prepn. of aldehydes or ketones by environmentally clean catalytic oxidn. of alcs. in water)
- IT 2564-83-2, 2,2,6,6-Tetramethyl-1-piperidinyloxy

RL: NUU (Other use, unclassified); USES (Uses)
(prepn. of aldehydes or ketones by environmentally clean catalytic oxidn. of alcs. in water)

IT 71-41-0, 1-Pentanol, reactions 96-41-3, Cyclopentanol 98-85-1, .alpha.-Methylbenzenemethanol 100-51-6, Benzenemethanol, reactions 111-27-3, 1-Hexanol, reactions 556-82-1, 3-Methyl-2-buten-1-ol 626-93-7, 2-Hexanol 1569-50-2, 3-Penten-2-ol 5131-66-8, 1-Butoxy-2-propanol 6032-29-7, 2-Pentanol

RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of aldehydes or ketones by environmentally clean catalytic oxidn. of alcs. in water)

IT 98-86-2P, Acetophenone, preparation 100-52-7P, Benzaldehyde, preparation 107-86-8P, 3-Methyl-2-butenal 107-87-9P, 2-Pentanone 110-62-3P, Pentanal 120-92-3P, Cyclopentanone 142-62-1P, Hexanoic acid, preparation 591-78-6P, 2-Hexanone 625-33-2P, 3-Penten-2-one 84223-13-2P, 1-Butoxy-2-propanone

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of aldehydes or ketones by environmentally clean catalytic oxidn. of alcs. in water)

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L168 ANSWER 16 OF 28 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 4

ACCESSION NUMBER: 2000:255865 CAPLUS

DOCUMENT NUMBER: 133:134845

TITLE: Chloroperoxidase-catalyzed oxidation of alcohols to aldehydes

AUTHOR(S): Kiljunen, E.; Kanerva, L. T.

CORPORATE SOURCE: Department of Chemistry, University of Turku, Turku, FIN-20014, Finland

SOURCE: Journal of Molecular Catalysis B: Enzymatic (2000), 9(4-6), 163-172

CODEN: JMCEF8; ISSN: 1381-1177

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 133:134845

AB Chloroperoxidase (CPO) catalyzes the oxidn. of primary alcs. (1-hexanol, 1-hexenol, epoxyhexanols and 3-phenylglycidol) selectively to aldehydes in biphasic systems of hexane or Et acetate and a buffer (pH 5.0). The cis to trans isomerization in the case of cis-2-hexenal can be avoided by working at low water contents or in org. solvents satd. with water. In the case of epoxy alcs., oxidn. to the aldehyde proceeds enantioselectively. Hydrogen peroxide and tert-Bu hydroperoxide have been used as an oxidant.

IT Alcohols, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(aliph.; prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)

IT Aldehydes, preparation

RL: SPN (Synthetic preparation); PREP (Preparation)

(aliph.; prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)

IT Alcohols, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(alkenols; prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)

IT Oxidation

(enzymic; prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)

- IT Epoxides
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydroxymethyl; prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)
- IT Aldehydes, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(oxiranyl; prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)
- IT Oxidation
Oxidation catalysts
Stereochemistry
(prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)
- IT Alcohols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(primary; prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)
- IT Oxidation
(stereoselective; prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)
- IT Aldehydes, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(unsatd.; prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)
- IT Aldehydes, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(.alpha..beta. unsatd.; prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)
- IT 9055-20-3, Chloroperoxidase
RL: CAT (Catalyst use); USES (Uses)
(prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)
- IT 75-91-2, tert-Butyl hydroperoxide 7722-84-1, Hydrogen peroxide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)
- IT 104-76-7, 2-Ethyl-1-hexanol 111-27-3, 1-HEXANOL, reactions 137-32-6,
2-Methyl-1-butanol 928-94-9, (Z)-2-Hexen-1-ol 928-95-0,
(E)-2-Hexen-1-ol 928-96-1, (Z)-3-Hexen-1-ol 90528-62-4,
(2R,3R)-rel-3-Propyloxiranemethanol 90528-63-5, (2R,3S)-rel-3-Propyloxiranemethanol 105663-44-3, (2R,3S)-rel-3-Phenyloxiranemethanol
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)
- IT 66-25-1P, Hexenal 123-05-7P, 2-Ethylhexenal 590-86-3P, 3-Methylbutanal 6728-26-3P, (E)-2-Hexenal 6789-80-6P, (Z)-3-Hexenal 16635-54-4P, (Z)-2-Hexenal 99773-54-3P, (2R,3R)-3-Phenyloxiranecarboxaldehyde 104528-10-1P, (2R,3S)-3-Propyloxiranecarboxaldehyde 124579-57-3P, (2R,3R)-3-Propyloxiranecarboxaldehyde
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of aldehydes by chloroperoxidase-catalyzed oxidn. of alcs.)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L168 ANSWER 17 OF 28 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:73809 CAPLUS

DOCUMENT NUMBER: 132:222257

TITLE: Improved synthesis of 3-bromo-2,2-dimethyl-propanal, a versatile building block for compounds with two geminal methyl groups on a quaternary center

AUTHOR(S): Jauch, J.

CORPORATE SOURCE: Inst. Organische Chemie Biochemie, Technische Univ. Munchen, Garching, D-85747, Germany

SOURCE: Journal fuer Praktische Chemie (Weinheim, Germany)

(2000), 342(1), 100-101
CODEN: JPCHF4; ISSN: 1436-9966
Wiley-VCH Verlag GmbH

PUBLISHER:
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 132:222257

AB A literature synthesis of 3-bromo-2,2-dimethyl-propanal (I) is reinvestigated due to very unreliable results obtained in application. The ensuing decompn. reactions are studied (including X-ray structure of the trimer of I; 2,4,6-tris-(2-bromo-1,1-dimethyl-ethyl)-1,3,5-trioxane), and a reliable method for the synthesis of I based on tetramethyloxypiperidine (TEMPO) catalyzed oxidn. with NaOCl as co-oxidant was developed.

IT Crystal structure
Molecular structure
(of tris(bromodimethylethyl)trioxane)

IT Oxidation
(prepn. of bromodimethylpropanal via tetramethyloxypiperidine (TEMPO) catalyzed oxidn. of corresponding alc.)

IT **Aldehydes, preparation**
RL: SPN (Synthetic preparation) **PREP (Preparation)**
(prepn. of bromodimethylpropanal via tetramethyloxypiperidine (TEMPO) catalyzed oxidn. of corresponding alc.)

IT **Alcohols, reactions**
RL: **RCT (Reactant); RACT (Reactant or reagent)**
(primary; prepn. of bromodimethylpropanal via tetramethyloxypiperidine (TEMPO) catalyzed oxidn. of corresponding alc.)

IT 261376-26-5P
RL: **BYP (Byproduct); PRP (Properties); PREP (Preparation)**
(decompn. product in prepn. of bromodimethylpropanal via tetramethyloxypiperidine (TEMPO) catalyzed oxidn. of corresponding alc.)

IT **2564-83-2, TEMPO**
RL: **CAT (Catalyst use); USES (Uses)**
(prepn. of bromodimethylpropanal via tetramethyloxypiperidine (TEMPO) catalyzed oxidn. of corresponding alc.)

IT 40894-00-6, 3-Bromo-2,2-dimethylpropanol
RL: **RCT (Reactant); RACT (Reactant or reagent)**
(prepn. of bromodimethylpropanal via tetramethyloxypiperidine (TEMPO) catalyzed oxidn. of corresponding alc.)

IT 34795-31-8P
RL: **SPN (Synthetic preparation); PREP (Preparation)**
(prepn. of bromodimethylpropanal via tetramethyloxypiperidine (TEMPO) catalyzed oxidn. of corresponding alc.)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L168 ANSWER 18 OF 28 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 5
ACCESSION NUMBER: 1999:819518 CAPLUS
DOCUMENT NUMBER: 132:49118
TITLE: Biocatalytic method for the production of aldehydes using chlorperoxidase
INVENTOR(S): Kanerva, Liisa; Kiljunen, Eero
PATENT ASSIGNEE(S): Neste Chemicals Oy, Finland
SOURCE: PCT Int. Appl., 25 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9967410	A1	19991229	WO 1999-FI530	19990617
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FI 9801465	A	19991226	FI 1998-1465	19980625
AU 9947857	A1	20000110	AU 1999-47857	19990617
PRIORITY APPLN. INFO.: FI 1998-1465 19980625				
WO 1999-FI530 19990617				
AB	The present invention relates to a biocatalytic method for the prodn. of aldehydes, and esp. to a 2-phase method, wherein a primary alc. is oxidized with an enzyme to an aldehyde. H2O2 or an org. peroxide is used as an oxidant. The invention relates to an improved method that may be used industrially for the oxidn. of alcs. with chlorperoxidase to aldehydes in homogeneous solvent mixts. and in 2-phase systems.			
IT	Aldehydes, preparation RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation) (biocatalytic method for the prodn. of aldehydes using chlorperoxidase)			
IT	Peroxides, biological studies RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent) (biocatalytic method for the prodn. of aldehydes using chlorperoxidase)			
IT	Alcohols, biological studies RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent) (primary; biocatalytic method for the prodn. of aldehydes using chlorperoxidase)			
IT	57044-25-4P, (R)-Glycidol 252953-11-0P RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation) (biocatalytic method for the prodn. of aldehydes using chlorperoxidase)			
IT	92418-71-8P RL: BPR (Biological process); BSU (Biological study, unclassified); BYP (Byproduct); BIOL (Biological study); PREP (Preparation); PROC (Process) (biocatalytic method for the prodn. of aldehydes using chlorperoxidase)			
IT	75-91-2, tert-Butyl Hydrogen peroxide 106-24-1 106-25-2 111-87-5, Octan-1-ol, biological studies 556-52-5, Oxiranemethanol 928-94-9 928-95-0, 2-Hex-1-nol, (2E)- 7722-84-1, Hydrogen peroxide, biological studies 20125-84-2, 3-Octen-1-ol, (3Z)- 67393-83-3 90528-62-4 90528-63-5 105663-44-3 RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent) (biocatalytic method for the prodn. of aldehydes using chlorperoxidase)			
IT	9055-20-3, Chlorperoxidase RL: CAT (Catalyst use); USES (Uses) (biocatalytic method for the prodn. of aldehydes using chlorperoxidase)			
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS				

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L168 ANSWER 19 OF 28 WPIDS (C) 2002 THOMSON DERWENT
 ACCESSION NUMBER: 1999-580283 [49] WPIDS
 DOC. NO. CPI: C1999-168775
 TITLE: Preparation of catalysts for oxidation of alcohols, e.g. steroids, allylic alcohols, rethynol, terpens and carbohydrates, e.g. sodium methylapproximatec-D-glucopyranoside uranate.
 DERWENT CLASS: A60 A97 E17 E19 J04
 INVENTOR(S): AVNIR, D; BLUM, J; DEGANELLO, G; PAGLIARO, M
 PATENT ASSIGNEE(S): (CNDR) CONSIGLIO NAZ DELLE RICERCHE; (YISS) YISSUM RES & DEV CO; (CHTE-N) IST DI CHIM & TECNOLOGIA DEI PROD NATUR; (YISS) YISSUM RES DEV CO HEBREW UNIV JERUSALEM
 COUNTRY COUNT: 86
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9947258	A1	19990923	(199949)*	EN	29
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL					
OA PT SD SE SL SZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB					
GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU					
LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR					
TT UA UG US UZ VN YU ZA ZW					
AU 9934420	A	19991011	(200008)		
IT 1299146	B	20000229	(200201)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9947258	A1	WO 1999-IT63	19990318
AU 9934420	A	AU 1999-34420	19990318
IT 1299146	B	IT 1998-RM172	19980318

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 9934420	A Based on	WO 9947258

PRIORITY APPLN. INFO: IT 1998-RM172 19980318

AB WO 9947258 A UPAB: 19991124

NOVELTY - A process for the preparation of catalysts for oxidation of alcohols, by entrapment of stable nitroxyl radicals in sol-gel glassy matrices, comprising:

(a) preparing a polymerizing mixture containing a monomer, water and an alcohol which promotes the mixing of the monomer and the water;

(b) adding 2,2,6,6-piperidin-1-oxyl (TEMPO), precursors or derivatives;

(c) adding water to the the mixture; and

(d) hydrolizing and polycondensing the monomers to obtain a gel.

DETAILED DESCRIPTION - The monomer is of formula (I):

M(R)n-(P)m (I)

M = a semi-metallic or a metal element;

R = a hydrolyzable substituent; n = 1-6;

P = a non-polymerizable substituent;

m = 0-6

Also claimed is a process for the preparation of reactive solgel materials by the entrapment of stable **nitroxyl** radicals, comprising:

- (a) polymerizing at least 1 monomer of formula (I) (a **metal** - or semi-**metal** alkoxide, **metal** ester or semi-**metal** ester), in the presence of stable di-tertiary-alkyl **nitroxyl** radicals (or precursors) of formula (II), to form a gel at room temperature, containing the trapped dopant;
- (b) drying under low pressure (under 70 mmHg, preferably 15 mmHg);
- (c) liophilisation to yield an areogel powder;
- (d) mild heat treatment (less than 100 deg. C, preferably at 45 deg. C) at atmospheric pressure to form a porous xerogel, coating of the gel on a mesoporous inorganic oxide (e.g. pumice stones); and
- (e) solvent removal at low pressure (preferably 15 mmHg):

A = 2-3 atom chain, preferably carbon atoms (methylene groups) or a combination of 1-2C with oxygen or nitrogen

USE - The catalysts are useful for oxidation of primary and secondary alcohols (e.g. steroids, allylic alcohols, rethynol, terpens and carbohydrates) to produce carboxylic acids, ketones and **aldehydes** (claimed). The catalysts are especially useful in the carbohydrate industry, e.g. for preparation of sodium methyl gamma -D-glucopyranoside uranate by oxidation of methyl gamma -D-glucopyranoside (in examples). **Nitroxyl** radicals are used for regioselective oxidation of prim. alcohols of soluble polymeric carbohydrates, e.g. starch, inulin and pullulan and, e.g. for high yield (91%) oxidation of E-retinol to E-retinal

ADVANTAGE - The new catalysts are efficient, recyclable (e.g., after simple filtration and washing with water), and none of the doped catalyst leaches out during use. The doped porous glasses allow the entrapped molecules to retain their physical and chemical properties and permit accessibility to external reagents through the pore network. The inorganic matrix is chemically and thermally inert; has a high surface area; and the entrapped molecules show enhanced stability, by contrast with organic polymer supports. **Nitroxyl** radicals are costly and moderately toxic, so their entrapment is advantageous for ease of recovery and recycling.

Dwg.0/0

L168 ANSWER 20 OF 28 WPIDS (C) 2002 THOMSON DERWENT
 ACCESSION NUMBER: 1999-347190 [29] WPIDS
 DOC. NO. CPI: C1999-102121
 TITLE: Production of **oxidized starch** by contacting with a reagent which produces an oxoammonium ion.
 DERWENT CLASS: A11 A82 A97 D16 D17 E13 F09 G02
 INVENTOR(S): BUCHERT, J; FORSELL, P; KRUUS, K; NIKU-PAAVOLA, M; TELEMAN, A; VIKARI, L
 PATENT ASSIGNEE(S): (VALW) VALTION TEKNIILLINEN TUTKIMUSKESKUS
 COUNTRY COUNT: 82
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9923240	A1	19990514	(199929)*	EN	9
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL					
OA PT SD SE SZ UG ZW					
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE					
GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG					
MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG					
US UZ VN YU ZW					

FI 9704138 A 19990505 (199932)
 AU 9910350 A 19990524 (199940)
 FI 105690 B1 20000929 (200051)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9923240	A1	WO 1998-FI860	19981104
FI 9704138	A	FI 1997-4138	19971104
AU 9910350	A	AU 1999-10350	19981104
FI 105690	B1	FI 1997-4138	19971104

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 9910350	A Based on	WO 9923240
FI 105690	B1 Previous Publ.	FI 9704138

PRIORITY APPLN. INFO: FI 1997-4138 19971104

AB WO 9923240 A UPAB: 19990723

NOVELTY - A selective oxidation of starch using a reagent which produces an oxoammonium ion (e.g. **TEMPO**), such that the regenerating oxidizing agent of the reagent does not contain halides

DETAILED DESCRIPTION - **Oxidized starch** is produced, by contacting a starch-containing starting material with a reagent producing an oxoammonium ion, using an oxidative **enzyme** as oxidising agent. The reaction is conducted in a liquid medium, and the reaction product separated after the reaction, then further purified. INDEPENDENT CLAIMS are also included for an **enzymatic** or chemical modification of **starch** with **oxidised TEMPO** using laccase or another peroxidase.

USE - Modified starch handled with **TEMPO** is useful as an additive in paper making, in the wet end of a paper machine, or as a coating material (claimed).

ADVANTAGE - A selective oxidation of both carboxyl and carbonyl groups is obtained under mild reaction conditions at a neutral pH, without using halide-containing oxidizing agents, and avoiding the build-up of difficult by-products.
 Dwg.0/0

L168 ANSWER 21 OF 28 WPIDS (C) 2002 THOMSON DERWENT
 ACCESSION NUMBER: 1999-337476 [28] WPIDS
 DOC. NO. CPI: C1999-099213
 TITLE: Preparation of **oxidized cellulose** using an **enzyme** as an **oxidizing agent** which generates an oxoammonium ion.
 DERWENT CLASS: A11 A97 D16 E13 F06 F09
 INVENTOR(S): BUCHERT, J; KRUUS, K; VIIKARI, L
 PATENT ASSIGNEE(S): (VALW) VALTION TEKNIILLINEN TUTKIMUSKESKUS
 COUNTRY COUNT: 82
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9923117	A1	19990514 (199928)*	EN	16	
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL					
OA PT SD SE SZ UG ZW					
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE					

GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG
MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG
US UZ VN YU ZW

FI 9704139 A 19990505 (199932)
AU 9910351 A 19990524 (199940)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9923117	A1	WO 1998-FI861	19981104
FI 9704139	A	FI 1997-4139	19971104
AU 9910351	A	AU 1999-10351	19981104

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 9910351	A Based on	WO 9923117

PRIORITY APPLN. INFO: FI 1997-4139 19971104

AB WO 9923117 A UPAB: 19990719

NOVELTY - The **enzymatic** oxidation of **TEMPO** (2,2,6,6-tetramethylpiperidin-1-oxyl) using a phenol oxidase as a natural oxidant, to form an oxoammonium ion useful in the oxidation of carbohydrates in cellulosic fibres.

DETAILED DESCRIPTION - **Oxidized cellulose** is prepared, by contacting a cellulose-containing material with a reactant and an oxidative **enzyme** as an oxidizing agent to produce an oxoammonium ion. The reaction is carried out in a liquid medium, and the reaction product is separated after the reaction.

INDEPENDENT CLAIMS are also included for modifying cellulose fibres by treating **cellulose** with chemically or **enzymatically oxidized TEMPO**. Pulp fibres are used, which are oxidized and obtained mechanically, chemically, chemimechanically or recycled.

USE - The process is useful in the production of paper having improved technical properties, flexibility, WRV and tear strength.

ADVANTAGE - The use of laccases replaces hazardous or toxic chemical oxidants.

DESCRIPTION OF DRAWING(S) - The reaction describes the oxidation of a stable **nitroxyl** radical to the oxoammonium ion, which **oxidizes** an **alcohol** group to an **aldehyde**, while the oxoammonium ion is simultaneously reduced to hydroxylamine.
Dwg.0/1

L168 ANSWER 22 OF 28 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:405953 HCAPLUS

DOCUMENT NUMBER: 131:185164

TITLE: The selective catalytic oxidation of terminal alcohols: a novel four-component system with MTO as catalyst

AUTHOR(S): Herrmann, Wolfgang A.; Zoller, Jochen P.; Fischer, Richard W.

CORPORATE SOURCE: Anorganisch-Chemisches Institut der Technischen Universität München, Garching, D-85747, Germany

SOURCE: Journal of Organometallic Chemistry (1999), 579(1-2), 404-407

CODEN: JORCAI; ISSN: 0022-328X

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

LANGUAGE: English
OTHER SOURCE(S): CASREACT 131:185164

AB A four-component system {H₂O₂, MTO [methyltrioxorhenium(VII)], HBr, TEMPO} in acetic acid catalyzes the selective oxidn. of terminal alcs. to the corresponding aldehydes with excellent selectivity and yield. The system allows the oxidn. of alcs. with hydrogen peroxide as oxidants either selectively to aldehydes or to the corresponding acids, depending on the reaction parameters. The new technique is esp. applicable to the oxidn. of carbohydrates.

IT Oxidation catalysts
(selective catalytic oxidn. of terminal alcs. a novel four-component system with methyltrioxorhenium(III) as catalyst)

IT Alcohols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(selective catalytic oxidn. of terminal alcs. a novel four-component system with methyltrioxorhenium(III) as catalyst)

IT Polysaccharides, preparation
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(selective catalytic oxidn. of terminal alcs. a novel four-component system with methyltrioxorhenium(III) as catalyst)

IT Aldehydes, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(selective catalytic oxidn. of terminal alcs. a novel four-component system with methyltrioxorhenium(III) as catalyst)

IT 9005-25-8, Starch, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(potato; selective catalytic oxidn. of terminal alcs. a novel four-component system with methyltrioxorhenium(III) as catalyst)

IT 65-85-0P, Benzoic acid, preparation
RL: BYP (Byproduct); PREP (Preparation)
(selective catalytic oxidn. of terminal alcs. a novel four-component system with methyltrioxorhenium(III) as catalyst)

IT 2564-83-2, Tempo 10035-10-6, Hydrogen bromide, uses 70197-13-6, Methylrhenium trioxide
RL: CAT (Catalyst use); USES (Uses)
(selective catalytic oxidn. of terminal alcs. a novel four-component system with methyltrioxorhenium(III) as catalyst)

IT 100-51-6, Benzyl alcohol, reactions 536-60-7, 4-IsopropylBenzyl alcohol 7722-84-1, Hydrogen peroxide, reactions 9005-82-7, Amylose 9037-22-3, Amylopectin
RL: RCT (Reactant); RACT (Reactant or reagent)
(selective catalytic oxidn. of terminal alcs. a novel four-component system with methyltrioxorhenium(III) as catalyst)

IT 100-52-7P, Benzaldehyde, preparation 122-03-2P, 4-IsopropylBenzaldehyde 9005-25-8DP, Starch, partially oxidized carboxylic acids, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(selective catalytic oxidn. of terminal alcs. a novel four-component system with methyltrioxorhenium(III) as catalyst)

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L168 ANSWER 23 OF 28 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1996:619245 CAPLUS
DOCUMENT NUMBER: 125:300542
TITLE: Efficient and Highly Selective Oxidation of Primary Alcohols to Aldehydes by N-Chlorosuccinimide Mediated by Oxoammonium Salts
AUTHOR(S): Einhorn, Jacques; Einhorn, Cathy; Ratajczak, Fabien;

Pierre, Jean-Louis
CORPORATE SOURCE: Laboratoire de Chimie Biomimetique, Universite J.
Fourier, Grenoble, 38041, Fr.
SOURCE: J. Org. Chem. (1996), 61(21), 7452-7454
CODEN: JOCEAH; ISSN: 0022-3263
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 125:300542
AB 2,2,6,6-Tetramethyl-1-piperidinyloxy catalyzes efficient oxidn. of primary
alcs. to aldehydes by N-chlorosuccinimide, in a biphasic
dichloromethane-aq. pH 8.6 buffer system in the presence of
tetrabutylammonium chloride. Aliph., benzylic, and allylic alcs. are
readily oxidized with no overoxidn. to carboxylic acids. Secondary alcs.
are oxidized to ketones with a much lower efficiency. Very high
chemoselectivities are obsd. when primary alcs. are oxidized in the
presence of secondary ones. Primary-secondary diols are selectively
transformed into hydroxy aldehydes, with, in some cases, no detectable
formation of the isomeric keto alcs.
IT Oxidation
(oxidn. of primary alcs. to aldehydes by N-chlorosuccinimide mediated
by oxoammonium salts)
IT Alcohols, reactions
RL: RCT (Reactant)
(oxidn. of primary alcs. to aldehydes by N-chlorosuccinimide
mediated by oxoammonium salts)
IT Aldehydes, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(oxidn. of primary alcs. to aldehydes by N-chlorosuccinimide mediated
by oxoammonium salts)
IT 128-09-6, N-Chlorosuccinimide 2564-83-2, TEMPO
RL: CAT (Catalyst use); USES (Uses)
(oxidn. of primary alcs. to aldehydes by N-chlorosuccinimide mediated
by oxoammonium salts)
IT 98-85-1, .alpha.-Methylbenzyl alcohol 100-51-6, Benzyl alcohol,
reactions 104-54-1, Cinnamyl alcohol 105-13-5, 4-Methoxybenzyl alcohol
106-24-1, Geraniol 111-87-5, 1-Octanol, reactions 112-43-6,
10-Undecenol 123-96-6, 2-Octanol 589-29-7, 1,4-
Bis(hydroxymethyl)benzene 619-73-8, 4-Nitrobenzyl alcohol 10596-05-1,
1,10-Dihydroxyundecane 15753-50-1, cis-1,2-Bis(hydroxymethyl)cyclohexane
17488-65-2 80463-22-5, 4-(1-Hydroxyethyl)benzyl alcohol 88682-29-5
RL: RCT (Reactant)
(oxidn. of primary alcs. to aldehydes by N-chlorosuccinimide mediated
by oxoammonium salts)
IT 98-86-2P, Acetophenone, preparation 100-52-7P, Benzaldehyde, preparation
104-55-2P, Cinnamaldehyde 111-13-7P, 2-Octanone 122-57-6P, Methyl
styryl ketone 123-11-5P, 4-Methoxybenzaldehyde, preparation 124-13-0P,
Octanal 141-27-5P, Geraniol 555-16-8P, 4-Nitrobenzaldehyde,
preparation 623-27-8P, 1,4-Benzenedicarboxaldehyde 6939-71-5P
38199-58-5P 39770-05-3P, 9-Decenal 52010-95-4P 80463-21-4P,
4-(1-Hydroxyethyl)benzaldehyde
RL: SPN (Synthetic preparation); PREP (Preparation)
(oxidn. of primary alcs. to aldehydes by N-chlorosuccinimide mediated
by oxoammonium salts)
L168 ANSWER 24 OF 28 JICST-EPlus COPYRIGHT 2002 JST
ACCESSION NUMBER: 930897312 JICST-EPlus
TITLE: Recent Advances in the Catalytic Oxidation of Alcohols with
2,2,6,6-Tetramethylpiperidine-1-oxyl (TEMPO) and
Its Application to Organic Synthesis.
AUTHOR: INOKUCHI TSUTOMU; TORII SHIGERU

MATSUMOTO SHIGEAKI
CORPORATE SOURCE: Okayama Univ., School of Engineering
Osakayukikagakukogyo
SOURCE: Yuki Gosei Kagaku Kyokaishi (Journal of Synthetic Organic
Chemistry, Japan), (1993) vol. 51, no. 10, pp. 910-920.
Journal Code: F0383A (Ref. 61)
CODEN: YGKKAE; ISSN: 0037-9980
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
STATUS: New

AB Recent advances in the oxidation reaction of alcohols by use of
2,2,6,6-tetramethylpiperidine-1-oxyl (**TEMPO**), and scope and
limitations as well as characteristic feature of the method are surveyed.
Emphasis is placed on the catalytic process by the aid of co-oxidants.
Useful applications of this oxidation method to syntheses of various
bioactive compounds and functionalized molecules are shown.
Primary alcohols are oxidized to aldehydes and
to carboxylic acids, selectively. Secondary alcohols, more slowly than
primary, can be oxidized to ketones in a slightly basic biphasic solution.
(author abst.)

L168 ANSWER 25 OF 28 MEDLINE
ACCESSION NUMBER: 93037430 MEDLINE
DOCUMENT NUMBER: 93037430 PubMed ID: 1416953
TITLE: Enzymatic synthesis of (R) and (S) 1-deuterohexanol.
AUTHOR: Bradshaw C W; Lalonde J J; Wong C H
CORPORATE SOURCE: Department of Chemistry, Scripps Research Institute, La
Jolla, CA 92037.
SOURCE: APPLIED BIOCHEMISTRY AND BIOTECHNOLOGY, (1992 Apr) 33 (1)
15-24.
Journal code: 6KJ; 8208561. ISSN: 0273-2289.
PUB. COUNTRY: United States
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199211
ENTRY DATE: Entered STN: 19930122
Last Updated on STN: 19980206
Entered Medline: 19921106

AB This paper describes practical enzymatic procedures for the synthesis of
(R) and (S) 1-deuterohexanol, a useful building block for chiral poly
isocyanated liquid crystals. Alcohol dehydrogenases from horse liver and
Pseudomonas catalyzed the reduction of hexanal with deuterated NAD (NADD)
resulting in 50% and 89% yields of (R) and (S) 1-deuterohexanol,
respectively. The deuterated cofactor was regenerated in situ by alcohol
dehydrogenase catalyzed oxidation of ethanol-d6 or 2-propanol-d8. The (S)
alcohol was also synthesized by the horse liver alcohol dehydrogenase
reduction of 1-deuterohexanal, which was prepared chemically from hexanal.
The yields of the reaction were greatly increased by the use of a biphasic
system or with the immobilized enzyme in anhydrous organic solvents. Horse
liver alcohol dehydrogenase was stabilized by immobilization on PAN or
noncovalent entrapment on XAD resin.

L168 ANSWER 26 OF 28 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1985:422872 HCAPLUS
DOCUMENT NUMBER: 103:22872
TITLE: Homolysis and electron-transfer reactions of
benzylcobalamin
AUTHOR(S): Blau, Reed J.; Espenson, James H.

CORPORATE SOURCE: Ames Lab., Iowa State Univ., Ames, IA, 50011, USA
SOURCE: J. Am. Chem. Soc. (1985), 107(12), 3530-3
CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal
LANGUAGE: English

- AB The rate consts. have been evaluated for decompn. of the benzylcobalamin species present in acetate buffers ($\text{PhCH}_2[\text{Co}]$) and in dil. HClO_4 ($\text{PhCH}_2[\text{Co}]\cdot\text{H}^+$) in the presence of O_2 , 4-hydroxy-2,2,6,6-tetramethylpiperidinyloxy (4-HTMPO), and Fe^{3+} . Many of these reactions governed by the initial and rate-limiting homolytic cleavage of the Co-C bond. In the case of 4-HTMPO, the kinetic inhibition by vitamin $\text{B}_{12}\text{r}(\text{CoII})$, together with the equil. const. for benzyl transfer between benzylcobalamin and pentaquabenzylchromium(2+), permits the evaluation ($\pm 20\%$) of these rate consts.: $[\text{CoII}]\cdot\text{H}^+ + \text{PhCH}_2\cdot$ ($k = 3.5 \times 10^8 \text{ M}^{-1} \text{ s}^{-1}$) and $4\text{-HTMPO} + \text{PhCH}_2\cdot$ ($k = 5.4 \times 10^7 \text{ M}^{-1} \text{ s}^{-1}$). In addn. to homolysis, $\text{PhCH}_2[\text{Co}]\cdot\text{H}^+$ reacts with Fe^{3+} by a direct oxidative pathway. The rate varies with $[\text{Fe}^{3+}]$ and $[\text{H}^+]$ consistent with rate limiting internal electron transfer within a binuclear complex. A 3-component mixt. of $\text{PhCH}_2[\text{Co}]\cdot\text{H}^+$, O_2 , and ascorbic acid activates O_2 for oxidn. of ascorbic acid via binding of O_2 to the base-off form of benzylcobalamin.
- IT Oxidation, aut-
(of benzylcobalamin, acceleration of, by mild reducing agents)
- IT Kinetics, reaction
(of homolysis, of benzylcobalamin in presence of oxygen)
- IT 50-81-7, uses and miscellaneous 123-31-9, uses and miscellaneous
RL: USES (Uses)
(autoxidn. of benzylcobalamin in presence of)
- IT 34788-74-4
RL: RCT (Reactant)
(benzyl transfer between cobalamin and, equil. of)
- IT 100-51-6P, preparation
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, during homolysis of benzylcobalamin, benzaldehyde formation in relation to)
- IT 100-52-7P, preparation
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, during homolysis of benzylcobalamin, benzyl alc. formation in relation to)
- IT 51005-53-9
RL: PROC (Process)
(homolysis and electron transfer reactions of)
- IT 2226-96-2
RL: RCT (Reactant)
(homolysis of benzylcobalamin in presence of oxygen and)
- IT 14463-33-3
RL: RCT (Reactant)
(homolysis of benzylcobalamin in presence of pyridinyloxy deriv. and)
- IT 96348-42-4
RL: RCT (Reactant)
(homolysis of, in presence of oxygen, kinetics of)
- IT 20074-52-6, uses and miscellaneous
RL: USES (Uses)
(oxidative cleavage of benzylcobalamin in presence of)
- IT 2154-56-5
RL: PRP (Properties)
(transfer of, from benzylcobalamin to chromium(2+), equil. of)

L168 ANSWER 27 OF 28 MEDLINE
ACCESSION NUMBER: 78210732 MEDLINE

DOCUMENT NUMBER: 78210732 PubMed ID: 27194
TITLE: Enzymatic synthesis of malonaldehyde.
AUTHOR: Summerfield F W; Tappel A L
SOURCE: BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (1978
May 30) 82 (2) 547-52.
Journal code: 9Y8; 0372516. ISSN: 0006-291X.
PUB. COUNTRY: United States
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197809
ENTRY DATE: Entered STN: 19900314
Last Updated on STN: 19980206
Entered Medline: 19780901

L168 ANSWER 28 OF 28 MEDLINE
ACCESSION NUMBER: 71011971 MEDLINE
DOCUMENT NUMBER: 71011971 PubMed ID: 5396934
TITLE: Preparation of radioactive L-glyceraldehyde 3-phosphate.
AUTHOR: Adelman R C; Brox L; Krulwich T A
SOURCE: ANALYTICAL BIOCHEMISTRY, (1969 Nov) 32 (2) 258-62.
Journal code: 4NK; 0370535. ISSN: 0003-2697.
PUB. COUNTRY: United States
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197012
ENTRY DATE: Entered STN: 19900101
Last Updated on STN: 19970203
Entered Medline: 19701209